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Trends in Ischemic Heart Disease Death Rates for Blacks and Whites — United States, 1981–1995

During 1995, ischemic heart disease (IHD) caused 21% of all deaths and 65% of deaths attributed to heart disease (*1*). Few reports comparing IHD mortality between blacks and whites have presented age-specific rates (*2,3*), and none have compared trends over time. This report examines the trend in age-specific IHD death rates for blacks and whites from 1981 through 1995 (the latest year for which data are available) and indicates that, in the younger age groups (35–64 years), blacks have a higher risk for IHD death than whites.

Average annual age-adjusted and age-specific IHD death rates for persons aged ≥35 years during 1981–1985, 1986–1990, and 1991–1995 were calculated from mortality data compiled by CDC and population data compiled by the Bureau of the Census. For each of the rate calculations, the numerator was the average annual number of deaths during the period and the denominator was the average of the five mid-year population estimates during the period. IHD deaths were defined as deaths for which the underlying cause was listed as codes 410.0–414.9 of the *International Classification of Diseases, Ninth Revision* (ICD-9). The cause of death is reported by attending physicians, medical examiners, or coroners on death certificates filed in state vital statistics offices. Age-adjusted IHD death rates for persons aged ≥35 years were calculated by the direct method using the 1970 U.S. standard population. Age-specific death rates were calculated for 10-year age groups. Black:white mortality ratios were calculated by dividing the death rate for blacks by the death rate for whites. Black:white mortality ratios for each year during 1981–1995 also were examined and indicated the same trends as the average annual mortality ratios for the 5-year periods presented here.

From 1981 through 1995, age-adjusted IHD death rates decreased for blacks and whites of both sexes (Table 1). The age-adjusted IHD mortality ratios for blacks compared with whites increased from 0.9 to 1.1 overall. For each time period, the age-adjusted black:white IHD mortality ratios were <1.0 for men and >1.0 for women.

The age-specific IHD death rates increased with increasing age for blacks and whites of both sexes (Table 1). The age-specific IHD mortality ratios were >1.0 in younger age groups, where death rates for blacks exceeded those for whites, and were <1.0 in older age groups, where death rates for whites exceeded those for blacks. This crossover of mortality ratios occurred in different age groups for men and

TABLE 1. Age-specific death rates* and age-adjusted death rates† for ischemic heart disease§ among adults aged ≥35 years, by race, sex, and 5-year period; and black:white ratios of death rates, by sex and 5-year period — United States, 1981–1995

Age group (yrs)	Period	Men			Women			Total		
		Black	White	Black:White ratio	Black	White	Black:White ratio	Black	White	Black:White ratio
Age-specific										
35–44	1981–1985	59.0	41.0	1.44	20.9	7.8	2.68	38.2	24.3	1.58
	1986–1990	46.3	31.2	1.49	16.0	6.2	2.59	30.0	18.7	1.61
	1991–1995	38.1	25.6	1.49	15.5	5.8	2.69	26.0	15.7	1.66
45–54	1981–1985	223.7	188.8	1.18	94.3	42.6	2.22	152.6	114.2	1.34
	1986–1990	176.9	136.5	1.30	76.2	32.8	2.32	121.8	83.8	1.45
	1991–1995	153.2	110.2	1.39	65.5	27.4	2.39	105.3	68.3	1.54
55–64	1981–1985	552.0	523.1	1.06	291.4	165.4	1.76	406.9	333.9	1.22
	1986–1990	464.4	412.0	1.13	248.1	138.1	1.80	343.0	268.0	1.28
	1991–1995	405.7	334.4	1.21	210.7	115.9	1.82	295.7	220.6	1.34
65–74	1981–1985	1082.1	1240.5	0.87	676.2	542.3	1.25	844.8	846.4	1.00
	1986–1990	959.5	990.5	0.97	597.5	442.8	1.35	746.2	683.5	1.09
	1991–1995	850.2	825.9	1.03	541.2	368.8	1.47	669.1	572.0	1.17
75–84	1981–1985	2031.8	2761.3	0.74	1513.8	1656.6	0.91	1710.1	2063.6	0.83
	1986–1990	1847.1	2315.9	0.80	1365.7	1388.4	0.98	1541.0	1733.1	0.89
	1991–1995	1696.2	1961.3	0.86	1262.9	1174.4	1.08	1419.1	1476.1	0.96
≥85	1981–1985	3729.0	6188.2	0.60	3259.5	4992.3	0.65	3415.8	5336.0	0.64
	1986–1990	3667.6	5453.3	0.67	3325.0	4529.3	0.73	3426.1	4785.5	0.72
	1991–1995	3575.1	4980.4	0.72	3291.1	4124.7	0.80	3373.9	4360.7	0.77
Age-adjusted										
≥35§	*1981–1985*	*568.9*	*667.7*	*0.85*	*361.3*	*337.4*	*1.07*	*448.6*	*478.3*	*0.94*

* Per 100,000 population per year.
† Per 100,000 population per year for persons aged ≥35 years, age-adjusted to the 1970 U.S. standard population.
§ *International Classification of Diseases, Ninth Revision,* codes 410.0–414.9.

Ischemic Heart Disease — Continued

women. For example, during 1981–1985, the mortality ratios for men were <1.0 in the 65–74-year age group and those for women were <1.0 in the 75–84-year age group. In every age group, IHD death rates were greater for men than women, and age-specific black:white mortality ratios were greater for women than men.

From 1981 through 1995, age-specific IHD death rates decreased for blacks and whites within each sex and age group except for black women aged ≥85 years (Table 1). However, these decreases were greater for whites than blacks during this period, resulting in a greater disparity of IHD death rates between blacks and whites and in increasing black:white mortality ratios. The age-specific black:white mortality ratios increased in every age group overall, and the black:white mortality ratios increased across the three 5-year periods for men (Figure 1) and women (Figure 2) of every age group except the 35–44-year age group. This increase in the mortality ratios resulted in a shifting of the age groups at which death rates for blacks exceeded those for whites, such that the disparity between young blacks and whites extended into older age groups. For example, during 1981–1985, the total age-specific black:white mortality ratios remained >1.0 until the 65–74-year age group, but during 1991–1995 these mortality ratios remained >1.0 until the 75–84-year age group.

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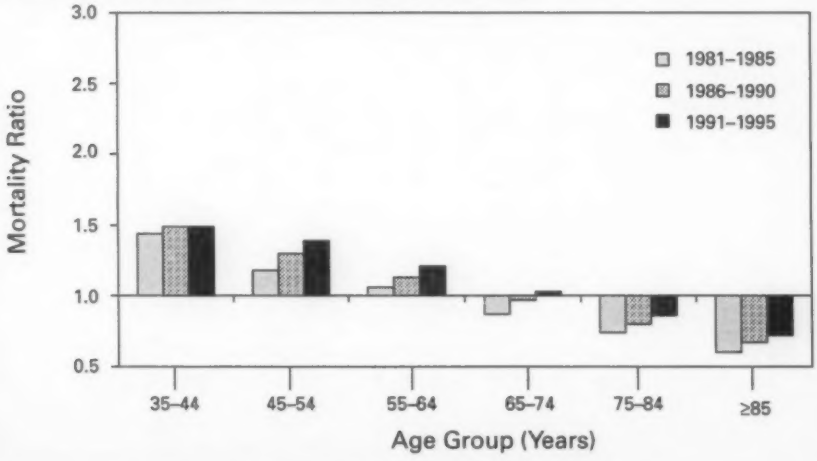
Editorial Note: The findings in this report indicate that IHD death rates declined for all age groups during 1981–1995; however, these decreases were greater for whites than for blacks, causing an increase in the black:white IHD mortality ratios. Black:white mortality ratios were particularly high for young women; black women in the

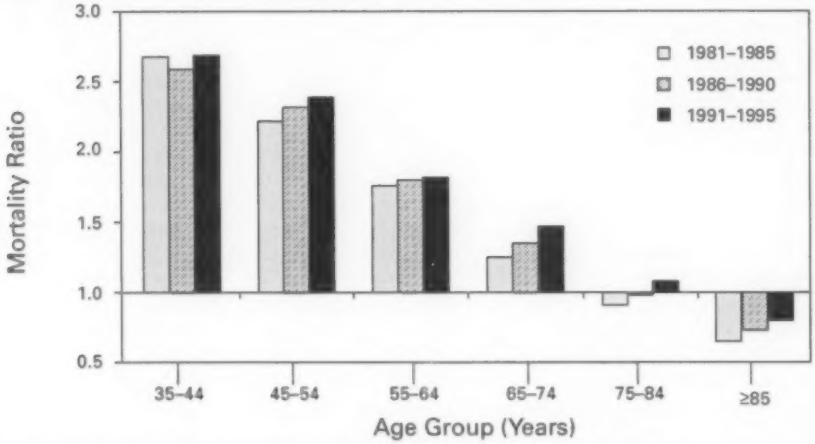
FIGURE 1. Black:white ischemic heart disease* mortality ratios† for men, by age group and 5-year period — United States, 1981–1995



* *International Classification of Diseases, Ninth Revision,* codes 410.0–414.9.
† Ratios of age-specific death rates per 100,000 population.

Ischemic Heart Disease — Continued

FIGURE 2. Black:white ischemic heart disease* mortality ratios† for women, by age group and 5-year period — United States, 1981–1995



* *International Classification of Diseases, Ninth Revision,* codes 410.0–414.9.
† Ratios of age-specific death rates per 100,000 population.

35–44- and 45–54-year age groups experienced IHD death rates more than twice those of white women in the same age groups. Furthermore, the disparity in IHD death rates between blacks and whites in the younger age groups increased and extended into older age groups during this period. By 1991–1995, the black:white mortality ratios were <1.0 only in the 75–84- and ≥85-year age groups for men and in the ≥85-year age group for women. In addition, among the older age groups, where death rates for whites exceeded those for blacks, the gap appeared to be closing over time, with the black:white mortality ratios increasing toward 1.0.

Since the mid-1970s, whites (especially white men) have experienced greater declines than blacks in age-adjusted IHD death rates (*4–6*). Although this report found that blacks had either similar or lower age-adjusted rates during 1981–1995, the age-specific rates for this period showed a notable race disparity for persons aged 35–64 years. Death rates for these younger age groups were considerably lower than those for older age groups. Nonetheless, the increased risk for IHD death among younger black men and women represents a substantial number of years of potential life lost.

IHD death rates are affected by changes in modifiable risk factors associated with IHD and the successful diagnostic and treatment efforts in preventing mortality. The disparities in early IHD death rates by race in this report probably reflect differing distributions of risk factors (e.g., cigarette smoking, body weight, diabetes, and hypertension) and socioeconomic status (*2*). Other potential explanations for the increasing disparity between blacks and whites in premature IHD mortality include increasing differentials over time in the detection and treatment of IHD risk factors and in the quality of acute, in-hospital, and/or post-hospital medical care for IHD. In addition, the

Ischemic Heart Disease — Continued

variation in physician, coroner, and medical examiner practices in reporting IHD on death certificates may have contributed to these differences. Compared with whites, blacks have a higher prevalence of some IHD risk factors (e.g., hypertension and diabetes) (*6*), are less likely to receive certain diagnostic and therapeutic coronary procedures (*7,8*), and may have a higher proportion of sudden and out-of-hospital deaths from IHD (*9*).

Public health research and intervention efforts are needed to determine and address the underlying factors associated with the greater risk for IHD death among younger (aged <65 years) blacks than among younger whites and to address the slower decline in the IHD death rates among blacks of all ages. The continued monitoring of age-specific IHD mortality by race/ethnicity, continued monitoring of the prevalence of modifiable risk factors for IHD by race/ethnicity, and collection and analysis of population-based data on IHD incidence and treatment should be conducted to monitor the success of public health efforts to reduce IHD morbidity and mortality. Setting objectives for reductions in IHD mortality among persons aged <65 years also may be useful. CDC recently awarded funds to eight states to develop programs for the prevention of cardiovascular disease, including IHD. These programs will emphasize development of policies and environmental changes to reduce and prevent cardiovascular diseases. In particular, these programs will target cardiovascular diseases in minority and low-income populations.

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African Tick-Bite Fever Among International Travelers — Oregon, 1998

In May 1998, the Oregon Health Division received a report from a local physician that nine persons developed annular skin lesions accompanied by influenza-like symptoms within 8 days of leaving southern Africa. All nine persons were members of a 34-person group from Oregon that traveled to Swaziland in April 1998 to participate in a 3-week humanitarian construction project. This report describes two cases of African tick-bite fever (ATBF) diagnosed in this group and underscores the importance of pretravel counseling about vectorborne illnesses and post-travel recognition of imported rickettsial diseases.

Case Reports

Case 1. A 61-year-old man developed an annular skin lesion 1.5 cm in diameter on his right lower leg 4 days after leaving the Swaziland construction site. The lesion had a dark center with an erythematous border. He also noted acute onset of fatigue, chills, and fever, but denied having other rashes or skin lesions. The patient was evaluated in Oregon by his physician, tickborne illness was diagnosed empirically and treated with 100 mg of doxycycline twice daily for 10 days. His systemic symptoms resolved completely within 24 hours of onset; however, full resolution of his skin lesion required more than 2 months. A serum sample obtained 6 days after symptom onset revealed antibodies reactive with *Rickettsia rickettsii* (the organism that causes Rocky Mountain spotted fever) at a titer of <1:8. A convalescent antibody titer obtained 4 weeks after symptom onset was 1:256. During his 3-week stay in Swaziland, the patient worked indoors and outdoors at two construction sites. He did not use insect repellent and did not notice or remove ticks from his body.

Case 2. A 56-year-old woman developed two erythematous annular skin lesions with dark centers 8 days after leaving the Swaziland construction site. The lesions were 1–2 cm in diameter and were on her back and right side. She also noted acute onset of fever, fatigue, chills, sweats, headache, myalgia, and arthralgias. She denied having other rashes or skin lesions. The patient was evaluated in Oregon by her physician, who noted a diffuse lymphadenopathy. Serologic titers for antibodies to rickettsial organisms were not obtained. She was empirically treated with 100 mg of minocycline twice daily for 10 days. Her systemic symptoms resolved 4 days after onset, but complete resolution of her skin lesions required more than 2 months. The patient worked indoors at the construction site. She did not use insect repellent and reported no tick bites or tick removals during her stay.

Summary of Cases

Eight of the nine reported ill persons were available for interview. Median age was 54 years (range: 41–65 years); five were male. All eight case-patients interviewed reported developing one or more annular skin lesions, 0.5–3.0 cm in diameter, characterized by dark centers and erythematous borders within 8 days of leaving southern Africa. Six developed skin lesions accompanied by fatigue, chills, and fever. Rash, other than the annular lesions, was uniformly absent. Median symptom duration was 4 days (range: 1–15 days), and no patient required hospitalization. Six had pretravel contact with a health-care provider, but none recalled counseling about tickborne diseases endemic to southern Africa. No ill person recalled a tick bite or tick removal during their stay, and none reported consistent use of insect repellent. Ill persons

African Tick-Bite Fever — Continued

sought medical attention after returning to the United States, and all were treated with antimicrobial medications. Case-patient 1 had serologic results consistent with acute rickettsial infection. For another case-patient, acute and convalescent (collected after he completed treatment with doxycycline) serologies did not reveal elevated levels of antibody reactive with *R. rickettsii*.

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Editorial Note: During 1986–1996,* the number of U.S. residents traveling to Africa increased by 70% (*1*). An estimated 19 million U.S. residents traveled overseas in 1996, including approximately 455,000 persons who traveled to Africa (*1*). In Africa, diseases for which travelers are at risk include vectorborne illnesses (e.g., ATBF and boutonneuse fever [BF]). ATBF, caused by *R. africae*, is transmitted by an infected *Amblyomma* tick and is endemic in sub-Saharan Africa (*2,3*). BF, caused by *R. conorii*, is transmitted by an infected *Rhipicephalus* tick and is endemic throughout Africa, the Middle East, and southern Europe (*3–5*). Tache noire, the annular skin lesion with a dark center and erythematous border, is common in both ATBF and BF, but diffuse rash is more common in BF and rare in ATBF (*2,4*). Although not definitive, the uniform absence of diffuse rash in case-patients is more consistent with ATBF than with BF.

ATBF and BF have been recognized as distinct clinical entities for many years, and differentiation of the etiologic agents (*R. africae* and *R. conorii*) has been possible since 1994 (*3*). Human antibodies cross-react to various rickettsial antigens, including *R. africae*, *R. conorii*, and *R. rickettsii*; therefore, serologic tests for rickettsial disease are group-specific but not species-specific (*6*). In the United States, patient serum is generally evaluated for antibodies reactive with *R. rickettsii* antigens, and final diagnosis is made by correlating serologic results with a patient's clinical and epidemiologic history.

The distinctive skin lesions, clinical symptoms, travel histories, and serology results indicate that the illnesses described in this report were caused by a tickborne rickettsial organism endemic in southern Africa. Among case-patients in this report, serologic results in one patient were consistent with acute rickettsial infection. The travel history effectively eliminates *R. rickettsii* as a causative agent but differentiation between *R. africae* and *R. conorii* is less clear.

The findings in this report underscore the importance of vectorborne illness as a topic of pretravel health-care counseling and post-travel diagnosis. To minimize the risk for BF, ATBF, and other tickborne diseases, clinicians should obtain a trip itinerary from patients traveling overseas and, when appropriate, provide advice about tick-bite prevention. Regular tick checks, prompt removal of any ticks, and regular use of insect repellents should be advised for all persons traveling to areas where *R. africae* and *R. conorii* are endemic. Travelers returning with tache noire skin lesions, fever, and influenza-like symptoms from areas where these illnesses are endemic should be evaluated for tickborne rickettsial diseases. Laboratory diagnosis can be made by measuring acute and convalescent serum antibodies to *R. rickettsii* or by immunofluorescent detection of the organism in biopsies taken from tache noire lesions (*7*).

*Data collected on outbound U.S. residents spending ≥1 nights in an overseas country. These data exclude visits to Canada and Mexico.

African Tick-Bite Fever — Continued

Doxycycline for a minimum of 7 days is the treatment of choice; however, chloramphenicol or a fluroquinalone are accepted antimicrobial alternatives (*8*).

Additional information about general and disease-specific health recommendations for international travel is available from CDC's "Yellow Book" (*9*) and World-Wide Web site http://www.cdc.gov/travel/travel.html.

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Dengue Outbreak Associated with Multiple Serotypes — Puerto Rico, 1998

Dengue is an acute viral disease caused by any of the four dengue virus serotypes (DEN-1, DEN-2, DEN-3, and DEN-4). The principal mosquito vector is *Aedes aegypti,* which has a worldwide distribution in tropical and many subtropical areas. All four virus serotypes produce a similar illness characterized by fever, headache, myalgias, arthralgias, rash, nausea and vomiting and induce life-long immunity that is specific to the infecting serotype (*1*). A small proportion of infected persons may develop the severe form of disease, dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS), but with early diagnosis and proper supportive management, fatality rates may be <1%. This report summarizes an epidemic of dengue in Puerto Rico in 1998 associated with multiple dengue serotypes.

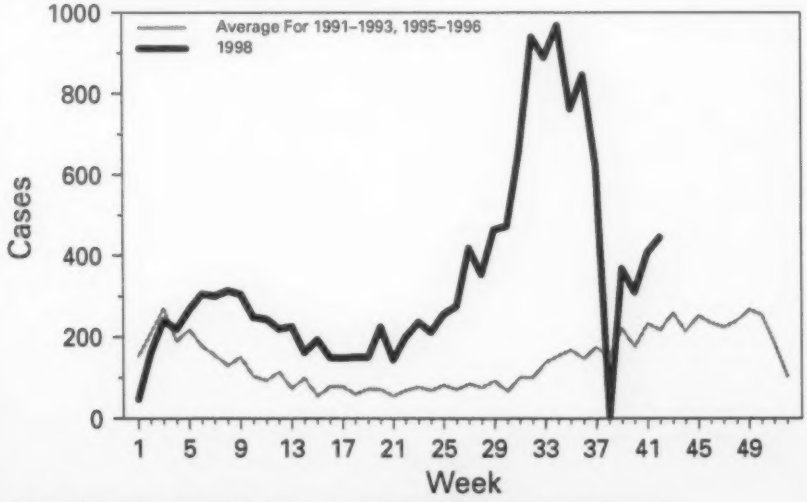
The laboratory-based dengue surveillance system of the Puerto Rico Department of Health (PRDH) and CDC receives diagnostic specimens and clinical information on a standardized form from government clinics, public and private hospitals, laboratories, and private physicians throughout Puerto Rico. In addition, infection-control nurses at all 56 general acute-care hospitals are asked to provide a voluntary report of demographic and clinical information on patients hospitalized with a diagnosis of suspected dengue fever. Cases are assigned to the date of onset of symptoms.

Dengue — Continued

From January 1 through August 29, 1998, 9803 cases of suspected dengue (i.e., disease in persons for whom a diagnostic serum sample was submitted) were reported. A total of 4677 (47.7%) were diagnosed as dengue by virologic or serologic testing, 526 (5.4%) were negative, and 4600 (46.9%) were indeterminate (i.e., testing was not complete or acute-phase serum was negative and no convalescent-phase sample was submitted). At the peak of the epidemic, the number of cases reported was approximately six times that expected for the time of year, based on a 5-year average (Figure 1). Of the 78 municipalities on the island, 67 (86%) had a statistically significant increase in reported cases, and 68 (87%) had a laboratory-diagnosed case (detection of antidengue IgM). Of 564 virus isolates, DEN-4 (45%) and DEN-1 (40%) predominated, followed by DEN-2 (12%), and DEN-3 (3%). In both reported and laboratory-positive cases, the male: female ratio was 1:1, and ages ranged from 0 to 98 years (median: 23 years). The islandwide attack rate was 2.8 per 1000 population based on the 1990 census. Age group-specific attack rates of reported disease were highest for persons aged 10–19 years (3.7; n=2494), and decreased with increasing age (1.7 among persons aged 65–98 years).

A total of 4190 (42.7%) case-patients were hospitalized, and case report forms of 2888 (29.5%) noted some hemorrhagic manifestation. A DHF diagnosis requires documentation of excessive vascular permeability (hemoconcentration ≥20%, hypoalbuminemia, or pleural or abdominal effusions), fever, platelet count ≤100,000/mm^3, and any hemorrhagic manifestation (*2*). In 88 reports (30 [34%] laboratory-positive), sufficient information was included in the report to allow classifying the patient as having DHF. The highest rate of DHF (5.6 per 100,000 population) occurred in persons aged 55–59 years. Five persons (three males) with a positive laboratory diagnosis of dengue were reported to have died; decedents ranged in age from 8 months to 90 years

FIGURE 1. Number of reported dengue cases, by week of report* — Puerto Rico, 1991–1993, 1995–1996, and 1997–1998



*Reporting was suspended during week 38 because of Hurricane Georges.

Dengue — Continued

(median: 19 years). However, only the infant had an illness meeting the case definition for DHF.

From January through August 1998, 17 cases of DEN-3 infection were documented in Puerto Rico: 12 occurred among males. Case-patients ranged in age from 6 to 83 years (median: 16 years); 12 were hospitalized. Sixteen cases occurred among persons residing in municipalities in the northern half of the island, with a distance of approximately 70 miles (110 km) between the most distant points. These patients denied any travel outside Puerto Rico for at least 5 weeks before onset of illness. An additional DEN-3 case acquired outside Puerto Rico was identified in July. Analysis of the nucleotide sequence of the entire glycoprotein gene of the first two DEN-3 viruses isolated in Puerto Rico in 1998 showed that they were genetically distinct from the DEN-3 that occurred in the Americas from 1963 to 1977 and belong to the genotype (group III) that caused DHF epidemics in Sri Lanka and India in 1989 and 1990 (*3*). This same genotype, first detected in Central America (Nicaragua and Panama) in late 1994, also produced epidemics of dengue and DHF throughout the region (*4–6*).

As part of the investigation of the initial DEN-3 cases, a survey of 45 premises around the second DEN-3 patient's residence indicated that 27 had one or more containers positive for *Ae. aegypti* larvae or pupae (Premise Index=60.0%), and 60 containers were positive (Breteau Index=133). Community residents had a high level of knowledge about *Ae. aegypti* larval habitats and of dengue as an illness and how it is transmitted.

In February 1998, as part of the response to each of the first two DEN-3 isolates, PRDH alerted the public through the news media to immediately empty, eliminate, or seal all containers that hold water and to do this each week. Active disease surveillance was intensified, and sentinel locations were established in hospitals in the north and south of the island for dengue diagnosis among children with undifferentiated febrile illnesses. Multiple training sessions were held for health-care professionals, emphasizing the need to monitor patients with mild hemorrhagic manifestations or hemoconcentration and to insure prompt administration of intravenous fluids.

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Editorial Note: In Puerto Rico, three dengue serotypes (DEN-1, DEN-2, and DEN-4) had circulated in the population from 1985 to 1997. Dengue typically occurs in a seasonal pattern, with minimal occurrence from March to June and a transmission peak from September to November. The number of reported cases during the last 5 nonepidemic years (1992, 1993, 1995, 1996, and 1997) ranged from 4645 to 11,078 (an average rate of 2.0 cases per 1000 population). In 1994, 23,693 cases were reported (6.7 per 1000 population). Although the introduction of a new serotype is one of the strongest determinants of an epidemic, the predominant viruses in the 1998 epidemic are DEN-4 and DEN-1, both of which have been present in Puerto Rico since 1981. Nevertheless, because of the 20-year absence of DEN-3, a large number of island residents are at risk for infection. Reporting was suspended briefly because of Hurricane Georges;

Dengue — Continued

however, preliminary analysis of surveillance data suggests that the epidemic peaked at the end of August, and dengue incidence is now decreasing.

Although the findings of a large survey in Puerto Rico in 1996 found high levels of awareness about dengue and the *Ae. aegypti* mosquito, most of the population is not taking action to control this vector (*7*). The principal barriers to action are lack of knowledge about how to locate and eliminate containers that could serve as larval habitats, the absence of external motivators to prompt the behavior, and the lack of positive feedback and other factors to encourage the public to carry out the necessary actions (*7*). Since the announcement of the initial phases of the epidemic in July, the PRDH, CDC, civic groups, and private organizations have initiated a public education campaign for mayors, Civil Defense and community leaders, and the public at large, addressing these issues and emphasizing the presence of DEN-3 on the island.

Ae. aegypti is an urban mosquito usually found in or near human dwellings (e.g., closets, bathrooms, behind curtains, and under beds). The species bites preferentially, although not exclusively, in the early morning and the afternoon (*8*). There is no vaccine to prevent dengue. Residents or persons traveling to areas with endemic disease can reduce exposure to mosquito bites by using mosquito repellents on exposed skin and clothing and remaining in well-screened or air-conditioned areas. Aggressive community action to eliminate mosquito breeding sites, in coordination with local and state government activities, appears to be the only effective and permanent method to prevent or control dengue transmission.

Dengue should be considered by physicians in the differential diagnosis of all patients who present with fever and a recent history of travel to a tropical area. Acetaminophen products are recommended for managing fever; acetylsalicylic acid and nonsteroidal anti-inflammatory agents (i.e., aspirin and ibuprofen) should be avoided because of their anticoagulant properties. For diagnosis, acute and convalescent serum samples should be obtained and sent through state or territorial health department laboratories to CDC's Dengue Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, 2 Calle Casia, San Juan, PR 00921-3200; telephone (787) 766-5181; fax (787) 766-6596; e-mail, his1@cdc.gov. Serum samples should be accompanied by clinical and epidemiologic information, including date of disease onset, date of collection of sample, and detailed recent travel history.

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Dengue — Continued

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Vaccination Coverage by Race/Ethnicity and Poverty Level Among Children Aged 19–35 Months — United States, 1997

The goals of the Childhood Immunization Initiative (CII) for 1996 were to have ≥90% of children receive three or more doses of diphtheria and tetanus toxoids and pertussis vaccine/diphtheria and tetanus toxoids (DTP/DT), poliovirus vaccine, and *Haemophilus influenzae* type b vaccine (Hib) and one dose of measles-mumps-rubella vaccine, and for ≥70% of children to receive three or more doses of hepatitis B vaccine (*1*). The National Immunization Survey (NIS) was undertaken as part of the CII to monitor vaccination coverage levels for each state and for 28 urban areas (*2*). This report presents coverage estimates by race/ethnicity and poverty level for 1997 and compares coverage estimates for 1995 and 1997; the findings indicate improvements in vaccination coverage levels among children living below poverty level* although these levels were lower than levels among children living at or above poverty level.

Each quarter since April 1994, an independent random sample of telephone numbers has been selected using random-digit dialing in the 78 survey areas to collect vaccination information for all children aged 19–35 months. With the consent of parents, vaccination data are verified with the children's health-care providers. NIS data are weighted to represent all children surveyed and to account for household nonresponse and lack of telephone coverage. Demographic characteristics and reported vaccination coverage of children with and without provider information were similar (*2*). In 1997, information on 32,742 children was collected from parents; provider information was collected for 22,393 (68.4%) of these. Of children with provider data, 66% were non-Hispanic white, 15% were non-Hispanic black, 14% were Hispanic, 1% were American Indian/Alaskan Native, 3% were Asian/Pacific Islander, and 1% were of other or unknown race/ethnicity.

Overall, vaccination coverage levels for the 22,393 children surveyed met or exceeded CII goals: coverage for three doses of DTP (DTP3) ranged from 92% among American Indians/Alaskan Natives to 97% among non-Hispanic whites; for three doses of poliovirus vaccine, the range was from 88% among Asians/Pacific Islanders to 92% among non-Hispanic whites; for Hib, the range was from 87% among American Indians/Alaskan Natives to 94% among non-Hispanic whites; for measles-containing vaccine (MCV), the range was from 88% among Hispanics to 92% among non-Hispanic whites; and for hepatitis B vaccine, the range was from 81% among Hispanics to 88% among Asians/Pacific Islanders. All racial/ethnic groups achieved the CII hepatitis B vaccine goal. Although a few racial/ethnic groups had point estimates <90% for vaccines covered by CII goals other than hepatitis B, the 95% confidence interval overlapped the CII goal with the exception for coverage with MCV among Hispanics (Table 1).

*Poverty status is based on family income and household size using Bureau of the Census poverty thresholds for 1997. Children for whom poverty level was not determined were excluded from this analysis.

TABLE 1. Vaccination coverage levels for selected vaccines among children aged 19–35 months living below poverty level* and all children, by race/ethnicity† — United States, National Immunization Survey, 1997§

	Non-Hispanic white				Non-Hispanic black				Hispanic				American Indian/ Alaskan Native				Asian/Pacific Islander			
	Below		Total		Below		Total		Below		Total		Below		Total		Below		Total	
Vaccine/Dose	%	95% CI¶	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
DTP/DT**																				
≥3 doses	93	±1.3	97	±0.3	95	±1.3	95	±0.8	92	±1.6	93	±0.9	92	±5.3	92	±3.2	96	±3.4	95	±1.5
≥4 doses	76	±2.2	84	±0.6	76	±2.5	78	±1.4	75	±2.6	77	±1.5	79	±8.3	80	±4.6	86	±6.5	80	±2.9
Poliovirus																				
≥3 doses	90	±1.5	92	±0.5	90	±1.8	90	±1.1	89	±1.9	90	±1.1	93	±5.1	91	±3.4	89	±5.4	88	±2.4
***Haemophilus influenzae* type b (Hib)**																				
≥3 doses	90	±1.5	94	±0.4	92	±1.6	92	±0.9	89	±1.9	90	±1.1	93	±5.2	87	±4.0	85	±6.3	89	±2.3
Measles-containing vaccine (MCV)††																				
≥1 doses	85	±1.8	92	±0.5	88	±1.9	90	±1.1	88	±1.9	88	±1.2	92	±5.4	92	±3.1	91	±5.0	89	±2.2
Hepatitis B																				
≥3 doses	80	±2.0	85	±0.6	82	±2.2	83	±1.3	79	±2.5	81	±1.4	83	±7.4	83	±4.3	94	±4.4	88	±2.4
Combined series																				
4 DTP/3 Polio/ 1 MCV	73	±2.2	80	±0.7	72	±2.6	74	±1.5	72	±2.7	74	±1.6	78	±8.3	78	±4.8	82	±7.0	75	±3.1
4 DTP/3 Polio/ 1 MCV/3 Hib	72	±2.3	79	±0.7	71	±2.6	73	±1.5	70	±2.8	72	±1.6	78	±8.4	72	±5.1	73	±8.0	70	±3.3

*Poverty status is based on family income and household size using Bureau of the Census poverty thresholds for 1997. Children for whom poverty level was not determined were excluded from this analysis.
†The race groups non-Hispanic white, non-Hispanic black, American Indian/Alaskan Native, and Asian/Pacific Islander do not include children of Hispanic origin. Children of Hispanic origin may be of any race.
§Children studied were born during February 1994–May 1996.
¶Confidence interval.
**Diphtheria and tetanus toxoids and pertussis vaccine/diphtheria and tetanus toxoids.
††Childhood Immunization Initiative goals are for measles-mumps-rubella vaccine; estimates are for MCV.

Vaccine Coverage — Continued

Coverage levels were low for the fourth dose of DTP (DTP4), ranging from 77% among Hispanics to 84% among non-Hispanic whites. The low coverage for DTP4 was the major contributor to low vaccination levels for the combined series, which were substantially lower than coverage for individual vaccines (Table 1).

Compared with children living at or above poverty level, children living below poverty level had significantly lower coverage for all vaccines. Coverage for DTP3 for children living below poverty level compared with coverage for children living above poverty level was 93% and 97%, respectively ($p<0.03$); for polio, coverage was 90% and 92%, respectively ($p<0.05$); for Hib, coverage was 90% and 94%, respectively ($p<0.03$); for MCV, coverage was 86% and 92%, respectively, ($p<0.03$); and for hepatitis B vaccine, coverage was 80% and 85% ($p<0.03$), respectively.

Among children living below poverty level, few statistically significant differences in coverage by race/ethnicity were observed: Asian/Pacific Islander children had higher coverage with hepatitis B vaccine and with DTP4 than non-Hispanic white, non-Hispanic black, and Hispanic children. Non-Hispanic black children had higher coverage with DTP3 than Hispanic children.

Since 1995, the differences between the racial/ethnic groups with highest and lowest coverage levels has not changed substantially except for hepatitis B vaccine. For coverage with DTP4, poliovirus vaccine, and MCV, the gap between highest and lowest coverage levels in 1997 compared with 1995 decreased two, one, and five percentage points, respectively; however, differences in coverage for DTP3 and Hib increased two and three percentage points, respectively. In contrast, the gap was narrowed substantially for hepatitis B vaccine; differences between highest and lowest coverage levels by racial/ethnic group was 25 percentage points in 1995 (*3*), and in 1997, this difference was reduced to seven percentage points. Improvements have occurred in hepatitis B vaccine coverage among all racial/ethnic groups, with increases between eight and 28 percentage points between the 1995 (*3*) and the 1997 NIS. Coverage with hepatitis B vaccine was highest in 1997 among Asian/Pacific Islander children.

Reported by: National Center for Health Statistics; Assessment Br, Data Management Div, National Immunization Program, CDC.

Editorial Note: In 1997, the NIS documented substantial progress in increasing vaccination levels among children living below poverty level; however, vaccine coverage levels remained lower than levels among children living at or above poverty level. Coverage levels for several vaccines were higher in 1997 than in 1995 among children living below poverty level in each racial/ethnic group except Asians/Pacific Islanders. Although coverage levels for Asian/Pacific Islander children living below poverty level did not improve, the lower precision of estimates among children in this group may mask any improvements.

Differences in coverage levels among racial/ethnic groups partly are accounted for by poverty level. In 1996, approximately 14.5 million children lived below poverty level; more than two thirds of black children and approximately three quarters of Hispanic children were living below or near poverty level (*3*). Studies are needed to determine how poverty is associated with undervaccination to target interventions and improve coverage.

The goals of the CII are to 1) eliminate indigenous cases of six vaccine-preventable diseases; 2) increase vaccination coverage; and 3) establish a vaccination delivery system that maintains and improves high vaccination coverage (*1*). The framework for

Vaccine Coverage — Continued

meeting the CII goals include improving the quality and quantity of vaccination delivery services, increasing community participation and education, reducing the cost of vaccines for parents, improving surveillance for coverage and disease, forming and strengthening partnerships, and improving vaccines (*1*). Efforts that may have contributed to improvements in vaccine coverage among children living below poverty level include the Vaccines for Children Program (*4*); federal support of state assessment and provider feedback of coverage levels in public clinics and community and migrant health centers (*5*); and strong linkages with the Special Supplemental Nutrition Program for Women, Infants, and Children (*6*). Efforts such as these are needed to maintain high levels of coverage where they exist and to reduce differences in coverage levels by race/ethnicity, poverty level, and other factors associated with undervaccination.

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Notice to Readers

Enterobacter cloacae Bloodstream Infections Associated with Contaminated Prefilled Saline Syringes — California, November 1998

During November 2–5, 1998, 11 children who received outpatient therapy from the hematology/oncology service at a hospital in California developed sepsis; 10 had *Enterobacter cloacae*-positive blood cultures. All patients had received intravascular catheter flushes using prefilled saline syringes (CAPS, Braun-McGaw, Detroit, Michigan). Culture of an unopened prefilled syringe grew *E. cloacae* with identical biochemical profiles to that of the patients. On November 9, the manufacturer initiated a recall of the syringes.

Clinicians detecting episodes of sepsis or bloodstream infection associated with prefilled saline syringes are requested to report these episodes to CDC's Hospital Infections Program, National Center for Infectious Diseases, telephone (404) 639-6413; fax (404) 639-6459; and to MedWatch, the Food and Drug Administration's Medical

Notices to Readers — Continued

Products Reporting Program, telephone (800) 332-1088; fax (800) 332-0178; address: MedWatch, 5600 Fishers Lane, Rockville MD 20852-9787; or on the World-Wide Web, http://www.fda.gov/medwatch.

Notice to Readers

Epidemiology in Action: Intermediate Methods Course

CDC and Emory University will cosponsor a course, "Epidemiology in Action: Intermediate Methods" during February 22–26, 1999, at Emory University. The course, designed for state and local public health professionals, will review the fundamentals of descriptive epidemiology and biostatistics, analytic epidemiology, and Epi Info software but will focus on mid-level epidemiologic methods directed at strengthening participants' quantitative skills, with an emphasis on up-to-date data analysis. Topics include advanced measures of association, normal and binomial distributions, logistical regression, field investigations, and summary of statistical methods. Prerequisite is an introductory course in epidemiology, such as "Epidemiology in Action: International Course in Applied Epidemiology" or any other introductory class. There is a tuition charge.

Additional information and applications are available from International Health Department (PSB), Emory University, 1518 Clifton Road, N.E., Room 742, Atlanta, GA 30322; telephone (404) 727-3485; fax (404) 727-4590; or e-mail, pvaleri@sph.emory.edu.

Notice to Readers

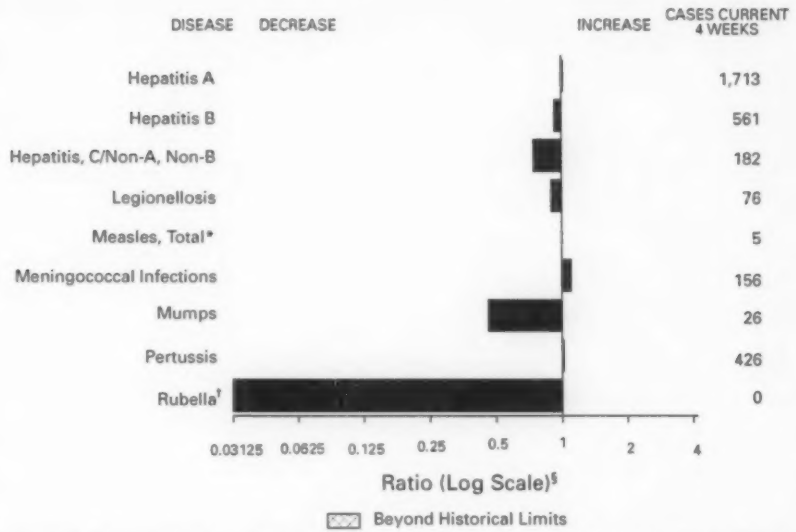
Epi Info 2000: A Course for Practitioners and Teachers of Epidemiologic Computing

CDC and Emory University will cosponsor a course, "Epi Info 2000: A Course for Practitioners and Teachers of Epidemiologic Computing" during March 8–12, 1999, at Emory University. The course is designed for practitioners or teachers of epidemiologic computing with intermediate to advanced skills in computing.

The course will provide hands-on experience with new Epi Info software, programming Epi Info software at the intermediate to advanced levels, methods of teaching epidemiologic computing, and computerized interactive exercises for teaching epidemiology and computing. There is a tuition charge.

Additional information and applications are available from International Health Department (PSB), Rollins School of Public Health, Emory University, 1518 Clifton Road, N.E., Room 746, Atlanta, GA 30322; telephone (404) 727-3485; fax (404) 727-4590; or e-mail, pvaleri@sph.emory.edu.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending November 7, 1998, with historical data — United States



*Because the current 4-week total number of reported cases of measles (total) equals the historical baseline, the ratio for week 44 measles is 1.0.

† No rubella cases were reported for the current 4-week period, yielding a ratio for week 44 of zero (0).

§ Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending November 7, 1998 (44th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	8
Brucellosis	50	Poliomyelitis, paralytic	1
Cholera	8	Psittacosis	42
Congenital rubella syndrome	3	Rabies, human	-
Cryptosporidiosis*	2,834	Rocky Mountain spotted fever (RMSF)	297
Diphtheria	1	Streptococcal disease, invasive Group A	1,845
Encephalitis: California*	80	Streptococcal toxic-shock syndrome*	45
eastern equine*	2	Syphilis, congenital¶	351
St. Louis*	24	Tetanus	34
western equine*	-	Toxic-shock syndrome	116
Hansen Disease	95	Trichinosis	11
Hantavirus pulmonary syndrome*†	19	Typhoid fever	291
Hemolytic uremic syndrome, post-diarrheal*	73	Yellow fever	-
HIV infection, pediatric*§	230		

-:no reported cases
*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update October 25, 1998.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending November 7, 1998, and November 1, 1997 (44th Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS‡				
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1998	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997
UNITED STATES	38,924	49,734	466,012	397,090	2,546	1,718	279,085	250,474	4,213	2,985
NEW ENGLAND	1,539	2,104	15,762	15,244	295	238	4,502	5,063	85	50
Maine	26	50	907	845	33	-	59	59	-	-
N.H.	28	34	801	692	41	42	78	81	-	-
Vt.	18	32	357	358	19	17	32	46	1	3
Mass.	785	729	7,136	6,186	139	138	1,940	1,799	81	40
R.I.	108	133	1,945	1,717	11	1	328	383	3	7
Conn.	574	1,126	4,616	5,444	52	40	2,065	2,695	-	-
MID. ATLANTIC	10,425	15,051	51,378	48,323	258	70	30,378	32,404	324	278
Upstate N.Y.	1,249	2,264	N	N	191	-	5,422	5,649	243	205
N.Y. City	5,885	8,005	29,672	23,096	7	12	13,242	12,099	-	-
N.J.	1,909	2,978	8,620	8,469	60	48	5,470	6,441	-	-
Pa.	1,382	1,804	13,086	16,758	N	10	6,244	8,215	81	73
E.N. CENTRAL	2,741	3,695	75,931	53,633	399	282	54,503	34,292	441	476
Ohio	562	766	21,723	19,000	108	60	14,120	12,427	7	17
Ind.	448	459	4,656	7,664	91	47	4,082	5,062	7	12
Ill.	1,044	1,515	22,899	U	99	39	18,817	U	31	81
Mich.	531	726	17,813	17,628	101	62	13,659	12,711	396	341
Wis.	156	229	8,840	9,341	N	74	3,825	4,092	-	25
W.N. CENTRAL	754	1,011	25,514	27,648	443	362	13,019	12,170	264	53
Minn.	146	175	5,246	5,690	186	191	2,023	1,987	9	3
Iowa	60	92	2,063	3,827	91	49	660	976	8	25
Mo.	367	506	10,292	10,261	44	59	7,448	6,292	241	10
N. Dak.	5	10	616	725	10	16	51	61	-	3
S. Dak.	15	8	1,334	1,137	30	34	197	126	-	-
Nebr.	59	84	1,969	2,231	56	-	775	985	4	2
Kans.	102	136	3,994	3,777	26	13	1,865	1,743	2	10
S. ATLANTIC	10,110	12,299	94,399	76,830	219	141	78,124	77,690	156	207
Del.	122	194	2,213	27	-	2	1,291	1,063	-	-
Md.	1,400	1,729	6,285	6,141	33	12	8,153	9,847	10	8
D.C.	751	956	N	N	1	-	3,102	3,729	-	-
Va.	771	1,010	11,019	9,976	N	42	7,494	7,256	11	24
W. Va.	72	108	2,187	2,470	9	7	673	788	6	16
N.C.	704	762	18,613	14,354	52	46	16,189	14,260	19	44
S.C.	640	688	14,264	10,635	11	8	9,146	9,810	7	35
Ga.	1,055	1,466	19,216	12,933	69	-	16,247	15,251	9	-
Fla.	4,603	5,386	20,602	22,294	44	24	15,829	15,686	94	80
E.S. CENTRAL	1,598	1,741	33,041	29,861	105	39	32,449	29,838	175	316
Ky.	249	321	5,450	5,359	30	-	3,183	3,474	19	12
Tenn.	591	677	11,554	10,761	50	33	10,024	9,372	149	214
Ala.	417	455	8,654	7,334	22	2	11,133	10,160	5	10
Miss.	341	288	7,383	6,407	3	4	8,109	6,832	2	80
W.S. CENTRAL	4,758	5,196	66,228	59,258	108	24	40,379	38,400	388	438
Ark.	177	193	3,219	2,455	11	10	3,312	4,147	10	13
La.	819	916	12,667	8,207	5	7	10,860	8,040	97	189
Okla.	256	256	8,112	6,303	15	7	4,458	4,075	14	7
Tex.	3,506	3,831	42,210	42,293	77	-	21,749	22,138	267	229
MOUNTAIN	1,360	1,424	27,150	25,216	304	213	7,657	6,846	311	270
Mont.	26	36	1,152	965	15	-	37	50	7	21
Idaho	27	48	1,698	1,403	38	22	145	125	87	60
Wyo.	3	13	610	505	53	55	29	44	63	66
Colo.	254	346	6,712	6,204	73	61	1,945	1,965	29	30
N. Mex.	189	146	3,114	3,249	18	13	762	738	83	50
Ariz.	549	343	9,626	8,942	21	26	3,472	2,967	8	25
Utah	114	125	1,823	1,476	75	21	192	232	23	4
Nev.	198	367	2,415	2,472	11	15	1,075	725	11	14
PACIFIC	5,631	7,213	76,609	59,077	415	349	18,074	13,771	2,069	897
Wash.	375	570	9,283	7,731	93	104	1,649	1,639	21	24
Oreg.	146	261	5,030	4,199	98	94	715	634	5	3
Calif.	4,949	6,256	58,722	44,339	218	137	15,033	10,743	1,988	720
Alaska	17	43	1,578	1,300	6	-	265	325	1	-
Hawaii	144	83	1,996	1,508	N	14	412	430	54	150
Guam	1	2	201	193	N	-	24	27	-	-
P.R.	1,499	1,715	U	U	6	U	320	493	-	-
V.I.	31	85	N	N	N	U	U	U	U	U
Amer. Samoa	-	-	U	U	N	U	U	U	U	U
C.N.M.I.	-	1	N	N	N	U	28	20	-	2

N: Not notifiable U: Unavailable - no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update October 25, 1998.

†National Electronic Telecommunications System for Surveillance.

‡Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending November 7, 1998, and November 1, 1997 (44th Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998*	Cum. 1997	Cum. 1998
UNITED STATES	1,089	879	11,142	10,423	1,157	1,568	6,015	7,232	12,098	15,032	5,901
NEW ENGLAND	72	74	2,535	2,754	54	79	64	119	393	372	1,262
Maine	1	3	11	8	5	1	1	1	10	18	193
N.H.	6	7	42	33	5	8	2	-	12	13	72
Vt.	7	12	11	8	1	2	4	-	2	5	59
Mass.	28	26	730	280	16	30	38	59	221	208	451
R.I.	19	9	576	357	9	7	1	2	49	31	85
Conn.	11	17	1,165	2,068	18	31	18	57	99	97	402
MID. ATLANTIC	256	182	7,263	5,998	297	461	227	347	2,375	2,666	1,365
Upstate N.Y.	80	52	3,613	2,494	85	65	34	36	308	372	950
N.Y. City	27	18	26	157	137	287	63	74	1,243	1,336	U
N.J.	15	25	1,571	1,714	49	81	72	140	521	566	192
Pa.	134	87	2,053	1,633	26	28	58	97	303	392	223
E.N. CENTRAL	346	285	139	542	111	149	920	550	1,058	1,518	126
Ohio	115	105	77	36	14	18	120	190	86	229	54
Ind.	101	45	54	32	11	16	205	153	100	132	11
Ill.	27	29	7	13	35	59	367	U	532	803	16
Mich.	71	71	1	25	44	40	176	111	322	264	35
Wis.	32	35	U	436	7	16	52	96	18	90	10
W.N. CENTRAL	69	51	182	119	85	46	108	156	337	474	603
Minn.	6	2	150	88	51	19	8	16	125	123	108
Iowa	10	9	21	5	8	9	-	7	40	46	136
Mo.	24	16	2	19	15	9	82	104	92	199	25
N. Dak.	-	2	-	-	2	3	-	-	8	10	122
S. Dak.	3	2	-	1	-	1	1	-	16	10	130
Nebr.	19	15	3	2	1	1	4	3	23	20	7
Kans.	7	5	6	4	8	4	13	26	33	66	75
S. ATLANTIC	124	106	755	686	274	275	2,213	2,951	1,675	2,824	1,711
Del.	12	11	37	109	3	5	20	22	18	30	30
Md.	26	18	535	441	76	77	554	795	247	264	403
D.C.	6	4	4	8	16	19	68	100	90	82	-
Va.	18	23	59	56	52	64	132	209	222	275	500
W. Va.	N	N	12	8	2	1	2	3	36	47	69
N.C.	11	13	50	32	25	16	636	773	365	346	136
S.C.	10	7	6	2	6	16	294	328	207	283	134
Ga.	8	1	5	1	34	32	241	461	420	515	259
Fla.	31	29	47	29	60	45	266	260	70	982	180
E.S. CENTRAL	58	49	81	84	27	34	1,048	1,493	896	1,100	243
Ky.	24	11	23	15	4	12	92	118	139	155	30
Tenn.	22	28	41	38	15	7	493	642	289	375	125
Ala.	5	3	16	10	6	10	247	371	302	361	86
Miss.	7	7	1	21	2	5	216	362	166	209	2
W.S. CENTRAL	40	32	23	84	28	50	891	1,157	1,825	2,158	132
Ark.	-	1	6	24	1	5	96	133	122	155	31
La.	4	6	4	3	15	13	363	314	241	194	-
Okla.	12	2	2	23	4	7	107	108	140	174	101
Tex.	24	23	11	34	8	25	325	602	1,322	1,635	-
MOUNTAIN	65	56	18	11	50	62	202	161	355	479	198
Mont.	2	1	-	-	1	2	-	-	18	6	51
Idaho	2	2	5	3	8	-	2	1	12	10	-
Wyo.	1	1	1	2	-	2	1	-	4	2	55
Colo.	16	18	5	-	19	27	11	13	U	71	39
N. Mex.	2	3	4	1	12	8	22	8	59	57	6
Ariz.	18	12	1	2	8	11	152	124	155	207	19
Utah	21	12	-	1	1	3	4	5	46	28	26
Nev.	3	7	2	2	1	9	10	10	61	98	2
PACIFIC	59	44	146	145	231	412	342	298	3,184	3,441	261
Wash.	12	7	7	8	17	19	27	9	177	254	-
Oreg.	-	-	20	17	16	22	5	9	120	123	7
Calif.	45	36	118	118	193	358	308	278	2,708	2,852	231
Alaska	1	-	1	2	2	3	1	1	45	64	23
Hawaii	1	1	-	-	3	10	1	1	134	148	-
Guam	2	-	-	-	1	-	1	3	36	13	-
P.R.	-	-	-	-	-	5	162	216	68	164	48
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	-	-	-	-	164	10	77	7	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending November 7, 1998, and November 1, 1997 (44th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	1998	Cum. 1998	1998	Cum. 1998	Cum. 1998	Cum. 1997
UNITED STATES	880	918	18,742	24,137	7,436	8,015	2	60	1	23	83	127
NEW ENGLAND	60	54	232	590	163	151	-	1	-	2	3	19
Maine	3	5	17	56	4	6	-	-	-	-	-	1
N.H.	9	10	11	31	18	15	-	-	-	-	-	1
Vt.	7	3	15	12	5	9	-	-	-	1	1	-
Mass.	35	32	98	242	48	64	-	1	-	1	2	16
R.I.	5	2	15	126	63	14	-	-	-	-	-	-
Conn.	1	2	76	123	25	43	-	-	-	-	-	1
MID. ATLANTIC	128	142	1,285	1,801	957	1,163	-	8	-	6	14	26
Upstate N.Y.	52	46	313	305	248	259	-	1	-	1	2	5
N.Y. City	26	38	328	800	243	415	-	-	-	-	-	10
N.J.	45	41	307	265	176	213	-	7	-	1	8	3
Pa.	5	17	337	431	290	276	-	-	-	4	4	8
E.N. CENTRAL	147	146	3,024	2,524	1,329	1,254	-	11	-	3	14	10
Ohio	45	78	270	272	68	69	-	-	-	1	1	-
Ind.	39	14	292	257	673	88	-	2	-	1	3	-
Ill.	49	36	566	707	161	240	-	-	-	-	-	7
Mich.	7	17	1,741	1,122	392	363	-	9	-	1	10	2
Wis.	7	1	155	166	35	494	-	-	-	-	-	1
W.N. CENTRAL	80	54	1,220	1,873	359	407	-	1	-	-	1	17
Minn.	62	42	115	166	43	35	-	-	-	-	-	8
Iowa	2	5	388	400	58	33	-	1	-	-	1	-
Mo.	9	4	557	957	216	293	-	-	-	-	-	1
N. Dak.	-	-	3	10	4	5	-	-	-	-	-	-
S. Dak.	-	2	31	20	2	1	-	-	-	-	-	8
Nebr.	1	1	39	85	14	13	-	-	-	-	-	-
Kans.	6	-	87	235	22	27	U	-	U	-	-	-
S. ATLANTIC	176	136	1,714	1,641	993	1,031	-	3	-	5	8	13
Del.	-	-	3	29	3	6	-	-	-	1	1	-
Md.	49	49	281	171	142	144	-	-	-	1	1	2
D.C.	-	-	53	28	11	28	-	-	-	-	-	1
Va.	16	12	182	198	90	108	-	-	-	2	2	1
W. Va.	5	3	6	10	8	14	-	-	-	-	-	-
N.C.	23	21	110	174	196	215	-	-	-	-	-	2
S.C.	3	4	36	95	39	90	-	-	-	-	-	1
Ga.	41	27	558	460	128	110	-	1	-	1	2	1
Fla.	39	20	485	476	376	316	-	2	-	-	2	5
E.S. CENTRAL	48	50	326	532	350	597	-	-	-	2	2	1
Ky.	7	7	20	66	39	35	-	-	-	-	-	-
Tenn.	27	28	200	328	242	384	-	-	-	1	1	-
Ala.	12	13	63	74	67	60	-	-	-	1	1	1
Miss.	2	2	43	64	2	118	U	-	U	-	-	-
W.S. CENTRAL	51	43	3,491	5,016	1,121	1,115	-	1	-	-	1	8
Ark.	-	2	89	191	87	76	-	-	-	-	-	-
La.	22	11	102	208	146	137	-	1	-	-	1	-
Okla.	26	28	522	1,278	87	42	-	-	-	-	-	1
Tex.	3	2	2,778	3,339	801	860	-	-	-	-	-	7
MOUNTAIN	92	74	2,810	3,683	695	746	2	3	-	-	3	8
Mont.	-	-	90	65	5	9	-	-	-	-	-	-
Idaho	1	1	224	118	38	40	-	-	-	-	-	-
Wyo.	1	4	35	30	7	23	-	-	-	-	-	-
Colo.	18	13	289	355	101	132	-	-	-	-	-	-
N. Mex.	7	8	133	304	281	222	-	-	-	-	-	-
Ariz.	53	29	1,768	1,929	162	174	2	3	-	-	3	5
Utah	5	3	177	500	66	80	-	-	-	-	-	1
Nev.	7	16	94	382	35	66	U	-	U	-	-	2
PACIFIC	98	219	4,640	6,477	1,469	1,551	-	32	1	5	37	25
Wash.	9	5	857	559	103	68	-	-	-	1	1	2
Oreg.	36	29	330	327	106	101	-	-	-	-	-	-
Calif.	45	170	3,401	5,428	1,242	1,359	-	5	1	3	8	19
Alaska	1	8	16	27	12	13	-	27	-	1	28	-
Hawaii	7	7	36	136	6	10	U	-	U	-	-	4
Guam	-	-	-	-	2	3	U	-	U	-	-	-
P.R.	2	-	49	246	331	892	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	6	3	1	53	42	U	-	U	-	-	1

N: Not notifiable U: Unavailable - no reported cases

*Of 208 cases among children aged <5 years, serotype was reported for 103 and of those, 41 were type b.
†For imported measles, cases include only those resulting from importation from other countries.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending November 7, 1998, and November 1, 1997 (44th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997
UNITED STATES	2,260	2,753	11	411	538	110	5,072	4,570	-	322	157
NEW ENGLAND	96	175	-	7	10	3	794	826	-	38	1
Maine	6	17	-	-	-	-	5	15	-	-	-
N.H.	4	14	-	-	-	-	95	119	-	-	-
Vt.	5	4	-	-	-	1	68	208	-	-	-
Mass.	49	84	-	4	3	1	577	442	-	8	1
R.I.	7	20	-	1	6	-	9	16	-	1	-
Conn.	25	36	-	2	1	1	40	26	-	29	-
MID. ATLANTIC	211	285	6	29	49	27	509	338	-	130	33
Upstate N.Y.	58	73	-	6	11	7	273	137	-	111	5
N.Y. City	22	46	-	4	3	-	23	60	-	14	28
N.J.	54	61	-	2	7	-	5	13	-	4	-
Pa.	77	105	6	17	28	20	208	128	-	1	-
E.N. CENTRAL	335	415	-	69	69	26	556	499	-	-	6
Ohio	126	147	-	27	28	1	247	144	-	-	-
Ind.	59	45	-	6	9	19	137	51	-	-	-
Ill.	82	126	-	11	11	6	96	77	-	-	2
Mich.	40	60	-	25	17	-	59	52	-	-	-
Wis.	28	37	-	-	4	-	17	175	-	-	4
W.N. CENTRAL	190	206	1	28	15	18	485	380	-	27	-
Minn.	29	34	1	13	5	15	290	233	-	-	-
Iowa	39	44	-	10	8	2	69	52	-	-	-
Mo.	70	87	-	3	-	-	32	60	-	2	-
N. Dak.	5	2	-	2	-	-	2	1	-	-	-
S. Dak.	7	5	-	-	-	-	8	4	-	-	-
Nebr.	13	13	-	-	1	1	18	8	-	-	-
Kans.	27	21	U	-	1	U	66	22	U	25	-
S. ATLANTIC	393	469	2	47	61	3	279	378	-	19	78
Del.	2	5	-	-	-	-	5	1	-	-	-
Md.	26	41	-	-	1	-	51	107	-	1	-
D.C.	1	11	-	-	-	-	1	3	-	-	1
Va.	36	51	-	8	10	-	30	42	-	1	1
W. Va.	15	16	-	-	-	-	1	6	-	-	-
N.C.	54	84	1	11	10	1	91	109	-	13	59
S.C.	52	49	-	6	10	1	26	25	-	-	15
Ga.	86	92	-	1	10	-	24	13	-	-	-
Fla.	121	120	1	21	20	1	50	72	-	4	2
E.S. CENTRAL	212	208	-	14	28	-	108	126	-	2	1
Ky.	29	42	-	-	3	-	46	56	-	-	-
Tenn.	69	72	-	1	5	-	33	35	-	2	-
Ala.	90	70	-	8	9	-	26	25	-	-	1
Miss.	24	24	U	5	11	U	3	10	U	-	-
W.S. CENTRAL	269	265	-	57	75	3	333	236	-	87	4
Ark.	28	31	-	11	1	1	83	43	-	-	-
La.	57	47	-	10	12	2	9	18	-	-	-
Okla.	39	37	-	-	-	-	29	31	-	-	-
Tex.	145	150	-	36	62	-	212	144	-	87	4
MOUNTAIN	131	158	-	32	54	16	929	994	-	5	7
Mont.	4	8	-	-	-	-	9	17	-	-	-
Idaho	10	10	-	4	3	3	243	501	-	-	2
Wyo.	5	3	-	1	1	-	8	7	-	-	-
Colo.	26	43	-	6	3	5	195	306	-	-	-
N. Mex.	25	26	N	N	N	1	88	89	-	1	-
Ariz.	41	39	-	6	32	-	198	35	-	1	5
Utah	14	12	-	5	8	7	154	18	-	2	-
Nev.	6	17	U	10	7	U	34	21	U	1	-
PACIFIC	423	572	2	128	177	14	1,079	793	-	14	27
Wash.	57	78	1	10	19	10	284	328	-	9	5
Oreg.	76	110	N	N	N	4	86	43	-	-	-
Calif.	281	375	1	94	125	-	680	388	-	3	14
Alaska	4	2	-	2	8	-	14	16	-	-	-
Hawaii	5	7	U	22	25	U	15	18	U	2	8
Guam	1	1	U	2	1	U	-	-	U	-	-
P.R.	6	8	-	1	7	-	3	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	2	4	U	1	-	U	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending November 7, 1998 (44th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	595	450	91	38	4	12	54
Boston, Mass.	150	112	23	9	2	4	23
Bridgeport, Conn.	33	30	2	-	-	1	3
Cambridge, Mass.	18	12	4	2	-	-	1
Fall River, Mass.	34	28	3	2	-	1	-
Hartford, Conn.	57	37	11	5	1	3	4
Lowell, Mass.	28	20	6	2	-	-	1
Lynn, Mass.	18	14	2	2	-	-	1
New Bedford, Mass.	32	26	5	1	-	-	-
New Haven, Conn.	31	21	7	2	-	1	2
Providence, R.I.	50	38	11	1	-	-	-
Somerville, Mass.	1	1	-	-	-	-	-
Springfield, Mass.	42	29	6	5	1	1	5
Waterbury, Conn.	31	26	3	1	-	1	2
Worcester, Mass.	70	56	8	6	-	-	12
MID. ATLANTIC	2,302	1,538	428	161	43	32	120
Albany, N.Y.	57	43	9	3	-	2	3
Allentown, Pa.	24	18	6	-	-	-	-
Buffalo, N.Y.	86	58	19	6	2	1	2
Camden, N.J.	22	12	7	2	-	1	4
Elizabeth, N.J.	16	11	3	2	-	-	-
Erie, Pa.	48	41	7	-	-	-	2
Jersey City, N.J.	20	8	9	2	-	1	-
New York City, N.Y.	1,181	827	227	88	22	17	57
Newark, N.J.	55	24	20	8	3	-	3
Paterson, N.J.	22	12	6	3	1	-	-
Philadelphia, Pa.	300	189	64	31	10	6	12
Pittsburgh, Pa.§	50	36	6	5	1	2	2
Reading, Pa.	19	15	4	-	-	-	-
Rochester, N.Y.	113	83	23	2	3	2	11
Schenectady, N.Y.	37	28	5	3	1	-	4
Scranton, Pa.	37	35	2	-	-	-	2
Syracuse, N.Y.	73	64	6	3	-	-	17
Trenton, N.J.	23	18	3	2	-	-	1
Utica, N.Y.	19	16	2	1	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,883	1,275	389	135	51	37	103
Akron, Ohio	54	36	12	4	1	1	-
Canton, Ohio	45	34	8	3	-	-	3
Chicago, Ill.	334	195	75	37	11	10	19
Cincinnati, Ohio	U	U	U	U	U	U	U
Cleveland, Ohio	162	110	38	6	5	3	3
Columbus, Ohio	175	112	43	10	4	6	11
Dayton, Ohio	122	93	21	5	2	1	12
Detroit, Mich.	220	129	54	23	10	4	6
Evansville, Ind.	59	43	12	2	2	-	1
Fort Wayne, Ind.	51	41	8	1	1	-	3
Gary, Ind.	5	1	4	-	-	-	-
Grand Rapids, Mich.	52	35	10	2	4	1	6
Indianapolis, Ind.	177	123	36	8	4	6	11
Lansing, Mich.	35	22	9	2	1	1	1
Milwaukee, Wis.	89	64	17	5	2	1	9
Peoria, Ill.	41	33	5	2	1	-	2
Rockford, Ill.	47	30	9	6	1	1	3
South Bend, Ind.	68	53	12	3	-	-	8
Toledo, Ohio	89	71	13	4	-	1	5
Youngstown, Ohio	58	50	3	2	2	1	-
W.N. CENTRAL	867	606	143	71	24	18	53
Des Moines, Iowa	92	69	16	5	-	2	12
Duluth, Minn.	20	16	4	-	-	-	-
Kansas City, Kans.	38	21	6	11	-	-	-
Kansas City, Mo.	97	63	14	5	2	8	2
Lincoln, Nebr.	41	31	7	1	2	-	4
Minneapolis, Minn.	184	133	34	8	6	3	13
Omaha, Nebr.	93	69	18	4	1	1	9
St. Louis, Mo.	124	81	20	18	3	2	-
St. Paul, Minn.	72	54	6	6	4	2	9
Wichita, Kans.	106	69	18	13	6	-	4

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,158	742	243	115	30	27	83
Atlanta, Ga.	184	102	44	25	6	7	4
Baltimore, Md.	143	88	31	19	3	2	12
Charlotte, N.C.	94	69	16	6	2	1	14
Jacksonville, Fla.	147	105	27	11	1	3	15
Miami, Fla.	108	75	24	5	3	1	-
Norfolk, Va.	50	29	12	4	2	3	4
Richmond, Va.	65	36	18	8	3	-	4
Savannah, Ga.	47	29	12	4	2	-	2
St. Petersburg, Fla.	56	45	8	2	1	-	5
Tampa, Fla.	135	87	27	13	2	5	16
Washington, D.C.	122	74	24	14	5	5	7
Wilmington, Del.	7	3	-	4	-	-	-
E.S. CENTRAL	705	479	137	56	15	17	41
Birmingham, Ala.	175	130	28	10	3	3	11
Chattanooga, Tenn.	59	41	14	3	-	1	2
Knoxville, Tenn.	83	59	16	5	-	3	19
Lexington, Ky.	63	39	15	6	2	1	4
Memphis, Tenn.	131	86	28	11	5	1	2
Mobile, Ala.	47	33	9	3	-	2	1
Montgomery, Ala.	18	6	3	5	-	4	-
Nashville, Tenn.	129	85	24	13	5	2	2
W.S. CENTRAL	1,368	923	264	109	42	29	71
Austin, Tex.	91	64	14	6	2	5	3
Baton Rouge, La.	22	16	4	2	-	-	1
Corpus Christi, Tex.	44	27	7	6	4	-	1
Dallas, Tex.	180	109	37	19	10	5	4
El Paso, Tex.	53	37	11	1	1	3	4
Ft. Worth, Tex.	122	83	22	9	4	4	8
Houston, Tex.	288	187	62	27	10	2	24
Little Rock, Ark.	80	51	14	11	2	2	5
New Orleans, La.	88	66	15	6	1	-	-
San Antonio, Tex.	193	148	29	8	4	4	8
Shreveport, La.	92	61	21	5	1	4	6
Tulsa, Okla.	115	74	28	9	3	-	7
MOUNTAIN	781	530	155	60	18	14	89
Albuquerque, N.M.	108	80	14	12	1	1	9
Boise, Idaho	30	24	3	2	-	-	3
Colo. Springs, Colo.	41	28	10	-	2	1	3
Denver, Colo.	94	58	23	6	3	4	13
Las Vegas, Nev.	164	107	37	17	3	-	8
Ogden, Utah	23	19	3	-	-	1	1
Phoenix, Ariz.	62	38	12	7	2	1	2
Pueblo, Colo.	25	21	4	-	-	-	3
Salt Lake City, Utah	108	77	17	5	3	5	14
Tucson, Ariz.	126	78	32	11	4	1	13
PACIFIC	1,088	777	203	71	15	22	92
Berkeley, Calif.	15	9	5	-	-	1	-
Fresno, Calif.	87	67	15	2	-	3	8
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	66	46	15	1	-	4	6
Long Beach, Calif.	78	49	18	5	3	3	12
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	31	23	5	3	-	-	3
Portland, Oreg.	143	99	26	13	4	1	5
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	141	100	23	15	2	1	17
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	208	152	39	12	3	2	17
Santa Cruz, Calif.	35	31	3	-	1	-	2
Seattle, Wash.	140	99	26	9	1	5	5
Spokane, Wash.	51	37	8	5	-	1	10
Tacoma, Wash.	93	65	20	6	1	1	7
TOTAL	10,647¶	7,320	2,053	806	242	208	686

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

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